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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,338	02/17/2004	Roger Thorpe	ISTOR.013A	9429

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EXAMINER	
PATEL, HARESH N	

ART UNIT	PAPER NUMBER
2154	

NOTIFICATION DATE	DELIVERY MODE
09/28/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/781,338	THORPE ET AL.	
	Examiner	Art Unit	
	Haresh Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 February 2004*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-37* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-37 are subject to examination.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-11, are drawn to, "a system including a networked storage controller, configured **to issue instructions** to at least one storage device and to **receive network communications**, with a hardware-based acceleration module used for **processing communications** relating to storage and retrieval requests in the second instruction set that are translated into instructions in the first instruction set and **subsequently issued** to the at least one storage device, and a software-based module used for processing communications including **exceptions and errors in network communications**, the modules **improves overall processing throughput of network communications** by the networked storage controller, utilizing a **steady state operation of a TCP connection** comprising a substantially **uninterrupted period of in-sequence network packet reception** / a substantially **error free period of network packet reception** / a period of packet reception wherein substantially **no out-of- sequence network packets are received**", classified in class 370, subclass 395.52.

II. Claims 12-14, is drawn to, "a system including **a host device** configured to receive network data requests from at least one remotely located **client device**; at least one storage device **associated with the host device**, a controller comprising, **a storage**

network processor configured with a hardware accelerator module, **a memory area for buffering data to be subsequently transferred between the host device** and the at least one storage device; a storage device **interface used for transmitting** and receiving data; and **a network device interface**, a **remote memory channel used to transfer data and meta-data to a partner controller** to provide at least **a degree of fault tolerance**, wherein storage data may be **re-created on the partner storage controller**, classified in class 712, subclass 232.

III. Claims 15-20, is drawn to, "a system for **high data rate access** to a storage device over a network **including an initiator device** configured to transmit network storage and retrieval requests, a target device, a storage network **processor associated with the target device** and the storage network processor configured with a hardware-accelerated protocol processing module, which **rapidly processes** common case network storage and retrieval requests to thereby achieve improved processing efficiency, the hardware-accelerated protocol **processing module performs a header processing function to parse** the network storage and retrieval **requests and deposits associated data into a main memory** component / accelerate **creation of packet headers, data gathering, and transmission** of network storage and retrieval requests / a **memory structure accelerator module configured to accelerates queue** and **stack access operations** associated with network storage and retrieval request processing", classified in class 710, subclass 74.

IV. Claims 21-37, is drawn to, "a system including a storage network processor (SNP) configured **to offload at least some packet processing tasks from a general**

purpose processor associated with a host device, a hardware-accelerated receive module configured to receive TCP **network packets**; a hardware-accelerated TCP protocol processing module configured **to process** common case **TCP network packets** and a hardware-accelerated transmit module configured **to transmit** TCP **network packets**, wherein, **offloading of the packet processing tasks occurs at several layers** associated with a TCP protocol stack including an IP layer and a TCP layer, wherein, the packet processing tasks comprise **packet parsing operations**, classified in class 709, subclass 219.

3. The inventions are distinct, each from the other because of the following reasons: Inventions I to IV, are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as, usage of "a system including a networked storage controller, configured **to issue instructions** to at least one storage device and to **receive network communications**, with a hardware-based acceleration module used for **processing communications** relating to storage and retrieval requests in the second instruction set that are translated into instructions in the first instruction set and **subsequently issued** to the at least one storage device, and a software-based module used for processing communications including **exceptions and errors in network communications**, the modules **improves overall processing throughput of network communications** by the networked storage controller, utilizing a **steady state operation of a TCP connection** comprising a substantially **uninterrupted period of in-sequence network packet reception** / a substantially

error free period of network packet reception / a period of packet reception wherein substantially **no out-of- sequence network packets are received**", lacking one or more of the particulars of inventions II to IV. Invention II has separate utility such as, usage of "a system including **a host device** configured to receive network data requests from at least one remotely located **client device**; at least one storage device **associated with the host device**, a controller comprising**, a storage network processor** configured with a hardware accelerator module, **a memory area for buffering data to be subsequently transferred between the host device** and the at least one storage device; a storage device **interface used for transmitting** and receiving data; and **a network device interface**, a **remote memory channel used to transfer data and meta-data to a partner controller** to provide at least **a degree of fault tolerance**, wherein storage data may be **re-created on the partner storage controller**", lacking one or more of the particulars of inventions of I, IV and III. Invention III has separate utility such as, usage of "a system for **high data rate access** to a storage device over a network **including an initiator device** configured to transmit network storage and retrieval requests, a target device, a storage network **processor associated with the target device** and the storage network processor configured with a hardware-accelerated protocol processing module, which **rapidly processes** common case network storage and retrieval requests to thereby achieve improved processing efficiency, the hardware-accelerated protocol **processing module performs a header processing function to parse** the network storage and retrieval **requests and deposits associated data into a main memory** component / accelerate **creation of packet headers, data gathering, and transmission** of network storage and retrieval requests / a **memory structure accelerator module configured to accelerates queue** and **stack access operations** associated

with network storage and retrieval request processing", one or more of the particulars of inventions of I, II and IV. Invention IV has separate utility such as, usage of "a system including a storage network processor (SNP) configured **to offload at least some packet processing tasks from a general purpose processor associated with a host device**, a hardware-accelerated receive module configured to receive TCP **network packets**; a hardware-accelerated TCP protocol processing module configured **to process** common case **TCP network packets** and a hardware-accelerated transmit module configured **to transmit** TCP **network packets**, wherein, **offloading of the packet processing tasks occurs at several layers** associated with a TCP protocol stack including an IP layer and a TCP layer, wherein, the packet processing tasks comprise **packet parsing operations**", one or more of the particulars of inventions of I, II and III. See MPEP 806.05.

4. These inventions are distinct for the reasons given above, and the search required for each Group is different and not co-extensive for examination purpose. For example, the searches for the two inventions would not be co-extensive because these groups would require different searches on PTO's classification class and subclass as following:

(a) Group I search (claims 1-13) would require use of search class 370, subclass 395.52 (not required for the invention II, III and IV).

(b) Group II search (claims 12-14) would require use of search class 712, subclass 232 (not required for the invention I, III and IV).

(c) Group III search (claims 15-20) would require use of search class 710, subclass 74 (not required for the invention I, II and IV).

(d) Group IV search (claims 21-37) would require use of search class 709, subclass 219 (not required for the invention I, II and III).

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper. Because these inventions are distinct for the reasons given above and the extensive search required for one group is not required for the other groups, restriction for examination purposes as indicated is proper. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

7. A shortened statutory period for response to this action is set to expire 0 (zero) months and 30 (thirty) days from the mail date of this letter. Failure to respond within the period for response will result in ABANDONMENT of the application (see 35 U.S.C. 133, MPEP 710.02, 710.02(b)).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haresh Patel whose telephone number is (571) 272-3973. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday from 10:00 am to 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached at (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Haresh Patel/

Haresh Patel

September 21, 2007